

SUBSTITUTE SPECIFICATION

DESCRIPTION

PLATING APPARATUS AND PLATING METHOD

Technical Field

OK to Enter
WL 8/27/10

5 The present invention relates to a plating apparatus and a plating method, and more particularly to a plating apparatus and a plating method used for filling a fine interconnect pattern formed in a substrate, such as a semiconductor substrate, with metal (interconnect material) such as copper so as to form
10 interconnects.

Background Art

Recently, there has been employed a circuit forming method comprising forming fine recesses for interconnects, such as
15 trenches or via holes in a circuit form, in a semiconductor substrate, embedding the fine recesses with copper (interconnect material) by copper plating, and removing a copper layer (plated film) at portions other than the fine recesses by CMP means or the like. In this method, from the viewpoint of reducing loads
20 on subsequent CMP, it is desirable that a copper plated film be deposited selectively in trenches or via holes in a circuit form, and that the amount of copper plated film deposited on portions other than the trenches or via holes be small. In order to achieve such an object, there have heretofore been proposed various ideas
25 regarding a plating solution, such as composition in a bath of a plating solution or a brightener used in a plating solution.

Meanwhile, in order to deposit a copper plated film selectively in trenches in a circuit form or the like, there has